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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,766	12/16/2003	Bong Jun Hwang	P-0610	4098

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EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/735,766

Applicant(s)

HWANG, BONG JUN

Examiner

Kevin M. Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

2. Claims 8, 11, 12, 22 and 24 are objected to because of the following informalities: The claims claim determining a moving speed of a signal. It is believed the moving speed of the transmitting end is determined. Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the more than one pair of in-phase signals and quadrature signals must be shown or the feature canceled from the claim. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 21 claims the received channel includes at least one pair of in-phase signals and quadrature-phase signals. More than one pair is not shown or discussed in the specification.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims claim a method comprising measuring, determining and controlling steps but the claims do not claim a tangible result and are, therefore, non-statutory.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the instant application's disclosed prior art (specifically figure 3) in view of Chen et al (US 2003/0139140).

Regarding claim 1, the instant application's disclosed prior art discloses a method of using the circuit shown in figure 3. The speed of a moving transmitting end is measured in the Doppler estimator 100 (paragraphs 17 and 19). The signal searching process of the receiver is controlled according to the measured moving speed of the transmitting end. The instant application's disclosed prior art does not disclose measuring a signal-to-noise ratio (SNR) of the signal transmitted from the transmitting end and controlling the signal search according to the SNR. Chen discloses a method of

using a disclosed wireless communication system. Chen discloses receiving symbols where the symbol from each stream is weighted by the estimated quality of the symbol and the weighted symbols from the streams are combined in an accumulator (paragraph 0087). This is done to recover messages error-free (paragraph 0090). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the weighting accumulation of Chen into the method of using the circuit of the instant application's disclosed prior art.

Regarding claim 2, the receiver is a bases station and the transmitter is a mobile.

Regarding claim 3, the instant application discloses the Doppler estimator 100 measures the transmitting end's moving speed.

Regarding claim 4, Chen discloses the SNR is measured (paragraph 0087).

Regarding claims 5 and 6, the instant application's disclosed prior art discloses weighting the accumulators (paragraphs 19 and 20).

Regarding claim 7, Chen discloses weighting the symbols according to the received signal quality of the symbol (paragraph 0087).

Regarding claim 8, the instant application's disclosed prior art discloses a method of using the circuit shown in figure 3. The received signals are despread in despreader 20. The despread signals are accumulated in accumulators 30 and 40 and squared in squarers 50 and 60. The squared signals are accumulated according to non-coherent multi-slot accumulation in accumulator 80. The speed of a moving transmitting end is measured in the Doppler estimator 100 (paragraphs 17 and 19). The signal searching process of the receiver is controlled according to the measured moving speed

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of the transmitting end. The instant application's disclosed prior art does not disclose measuring a signal-to-noise ratio (SNR) of the signal transmitted from the transmitting end and controlling the signal search according to the SNR. Chen discloses a method of using a disclosed wireless communication system. Chen discloses receiving symbols where the symbol from each stream is weighted by the estimated quality of the symbol and the weighted symbols from the streams are combined in an accumulator (paragraph 0087). This is done to recover messages error-free (paragraph 0090). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the weighting accumulation of Chen into the method of using the circuit of the instant application's disclosed prior art.

Regarding claim 9, the receiver is a bases station and the transmitter is a mobile.

Regarding claims 10 and 21, the instant application's disclosed prior art shows the received channels are I and Q channel signals in figure 3.

Regarding claims 11 and 12, the instant application's disclosed prior art discloses the Doppler estimator 100 measures the transmitting end's moving speed.

Regarding claim 13, Chen discloses the SNR is measured (paragraph 0087).

Regarding claims 14, 16 and 17-20, the instant application's disclosed prior art discloses weighting the accumulators (paragraphs 19 and 20).

Regarding claim 15, Chen discloses weighting the symbols according to the received signal quality of the symbol (paragraph 0087).

Regarding claim 22, the instant application's disclosed prior art discloses a method of using the circuit shown in figure 3. The received signals are despread in

despreader 20. The despread signals are accumulated in accumulators 30 and 40 and squared in squarers 50 and 60. The squared signals are accumulated according to non-coherent multi-slot accumulation in accumulator 80. The speed of a moving transmitting end is measured in the Doppler estimator 100 (paragraphs 17 and 19). A memory stores the output signals 90. The signal searching process of the receiver is controlled according to the measured moving speed of the transmitting end. The instant application's disclosed prior art does not disclose measuring a signal-to-noise ratio (SNR) of the signal transmitted from the transmitting end and controlling the signal search according to the SNR. Chen discloses a method of using a disclosed wireless communication system. Chen discloses receiving symbols where the symbol from each stream is weighted by the estimated quality of the symbol and the weighted symbols from the streams are combined in an accumulator (paragraph 0087). This is done to recover messages error-free (paragraph 0090). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the weighting accumulation of Chen into the method of using the circuit of the instant application's disclosed prior art.

Regarding claim 23, the instant application's disclosed prior art shows the received channels are I and Q channel signals in figure 3.

Regarding claims 24-27, the instant application's disclosed prior art discloses weighting the accumulators (paragraphs 19 and 20).

Regarding claims 28, 29, 34 and 35, Chen discloses weighting the symbols according to the received signal quality of the symbol (paragraph 0087).

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Regarding claim 30, the instant application's disclosed prior art discloses a first and second accumulator as shown in figure 3.

Regarding claims 31 and 32, the instant application's disclosed prior art discloses a first and second squaring circuit as shown in figure 3.

Regarding claim 33, the instant application's disclosed prior art discloses an adder adding the energy values as shown in figure 3.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd
2/3/2007


KEVIN BURD
PRIMARY EXAMINER